

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Werner Erhardt, et al. Art Unit : 1795  
Serial No. : 10/542,712 Examiner : Helen Ok Conley  
Filed : March 14, 2006 Confirmation No.: 5779  
Title : ELECTRODE FOR AN ELECTROCHEMICAL CELL, ELECTRODE COIL, ELECTROCHEMICAL CELL, AND PRODUCTION METHOD

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

AMENDMENT IN REPLY TO OFFICE ACTION OF APRIL 4, 2010

In response to the outstanding Office Action, please amend above-identified application as follows:

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An electrode for use with an electrochemical cell having comprising a liquid electrolyte, the electrode comprising:  
a coated film;  
a coating on the film, the coating comprising containing channels that are capable ~~ef~~ for holding the liquid electrolyte, the coated film being on coating comprising a surface of the electrode.
2. (Canceled)
3. (Currently Amended) The electrode of claim 1, wherein the channels comprise grooves on in the surface of the electrode.
4. (Canceled)
5. (Currently Amended) The electrode of claim 1, wherein the channels comprise uncoated regions of the electrode that are not covered by the coating film.

6. (Previously Presented) The electrode of claim 1, wherein at least one of the channels has a width between 0.1mm and 1mm.

7. (Previously Presented) The electrode of claim 1, wherein at least one of the channels has a depth between 10 $\mu$ m and 200 $\mu$ m.

8. (Withdrawn) The electrode of claim 1, wherein the electrode extends along a longitudinal direction and wherein the channels run transversely to the longitudinal direction.

9. (Previously Presented) The electrode of claim 1, wherein the channels comprise substantially straight lines that are substantially parallel to one another and that have substantially same lengths.

10. (Previously Presented) The electrode of claim 1, wherein the electrode extends along a longitudinal direction and wherein the channels run substantially diagonal to the longitudinal direction.

11. (Withdrawn) The electrode of claim 1, wherein the channels are curved and substantially parallel to one another.

12. (Withdrawn) The electrode of claim 1, wherein at least two of the channels intersect.

13. (Currently Amended) The electrode of claim 1, wherein the ~~coated~~ film comprises a metal film ~~coated with carbon powder~~, and wherein the ~~coating comprises~~ carbon powder ~~that is coated~~ contains the channels.

14. (Currently Amended) An electrode roll comprising:  
multiple layers of electrodes positioned one on top of another;  
wherein at least one of the multiple layers comprises a surface that is ~~coated~~ film,  
~~the film having a coating, the coated film containing coating comprising~~ channels ~~that~~  
~~are capable of~~ ~~for~~ holding liquid electrolyte.

15. (Previously Presented) The electrode roll of claim 14, wherein the multiple layers of electrodes comprise two electrodes wound together.

16. (Currently Amended) An electrochemical cell comprising:  
a liquid electrolyte; and  
multiple layers of electrodes positioned one on top of another;  
wherein at least one of the multiple layers comprises a surface that is ~~coated~~ film,

the film having a coating, the coated film containing coating comprising channels that hold for holding the liquid electrolyte.

17 to 22. (Cancelled)

23. (New) The electrode of claim 1, wherein the electrode consists of the film and the coating on the film.

24. (New) The electrode roll of claim 14, wherein the multiple layers of electrodes comprise electrodes having different polarities; and  
wherein the electrode roll further comprises a separator for separating electrode having different polarities.

25. (New) The electrode roll of claim 24, wherein the separator comprises channels that hold the liquid electrolyte.

REMARKS

Claims 1 to 16 and 23 to 25 are pending in this application. Claims 1, 14 and 16 are independent. Favorable reconsideration and further examination are respectfully requested.

The foregoing amendments are believed to address the claim objections found on page 2 of the Office Action. Withdrawal thereof is therefore requested.

Next, the Office Action states the following:

4. It is noted that claims 1, 3, 5-7, 9-10, 13-16 are product-by-process claims such as "coated" and "uncoated". "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Since electrode and film is the same as to that of the Applicant's, Applicant's process is not given patentable weight in this claim.

5. It is noted that claims 1, 3, 5, 6, 7, 9, 10, 13, 14 have "intended use" language such as "for use with an electrochemical cell having a liquid electrolyte," and capable of holding the liquid electrolyte," and it has been held that a recitation with respect to the

manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

1

Without conceding the propriety of the rejection<sup>2</sup>, the claims have been amended to address these concerns.

Turning to the art rejections, Independent claims 1, 14 and 16 were rejected over U.S. Patent No. 4,348,712 (Newcomb) and over U.S. Patent No. 4,439,812 (Chapman). The remaining dependent claims were rejected over Newcomb and/or Chapman, except for claim 13, which was rejected over these references each in combination with U.S. Patent No. 5,547,581 (Andelman). As shown above, the claims have been amended.

Independent claim 1 recites:

1. An electrode for use with an electrochemical cell comprising a liquid electrolyte, the electrode comprising:  
a film;  
a coating on the film, the coating comprising channels for holding the liquid electrolyte, the coating comprising a surface of the electrode.

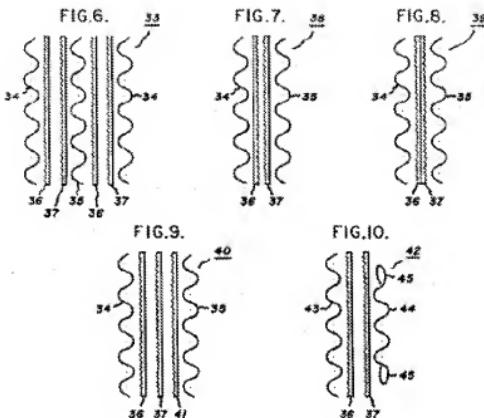
The applied art is not understood to disclose or to suggest at least the underlined portions of claim 1 above.

As previously explained, Newcomb describes a capacitor containing embossed electrodes. As shown in its Figs. 6 to 10 below, an electrode includes “a pair of patterned or dimpled foils 34 and 35”.

---

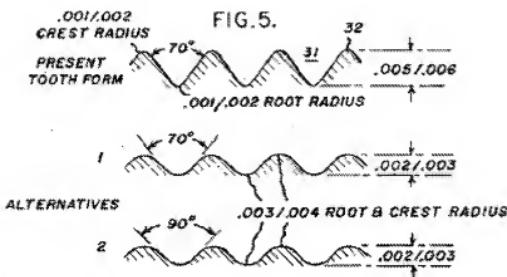
<sup>1</sup> Office Action, pages 2 and 3

<sup>2</sup> For example, “coated” in the unamended claims is clearly an adjective describing a state of the film, and not a process limitation. The changes have been made only to expedite prosecution.



As described in Newcomb, these patterns are embossed or raised in the foil itself. They are not a coating on a film, where the coating comprises channels for holding liquid electrolyte.

Chapman likewise is not understood to disclose or to suggest a coating on a film, where the coating comprises channels for holding liquid electrolyte. Rather, Chapman, like Newcomb, describes channels that are formed by embossing or indenting a foil, as shown in Fig. 5 below.



For example, in column 3, line 15, the patentee describes using an indenting tool to form the flutes or channels in foil. This is clearly not a coating, as claimed.

The Office Action formerly alleged that the term "coated film" constituted a product-by-process limitation and, therefore, gave it no patentable weight. This is reiterated on pages 9 to 11 of the Office Action. The claimed coating, however, is not a product-by-process limitation and is not found in Newcomb or Chapman. Accordingly, withdrawal of the rejection over those references is requested.

For at least the foregoing reasons, we submit that claim 1 is patentable over Newcomb, Chapman, or a combination of the two. Independent claims 14 and 16 include features similar to those of claim 1, and are also believed to be patentable over Newcomb, Chapman, or a combination of the two.

Remaining dependent claims are also believed to define patentable features. Each dependent claim partakes of the novelty of its corresponding independent claim and, as such, has not been discussed specifically herein.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

In view of the foregoing amendments and remarks, we respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

The undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at 617-521-7896.

Please charge any deficiency in fees or credit any overpayment to Deposit Account 06-1050 referencing Attorney Docket No. 14219-0096US1.

Respectfully submitted,

September 2, 2010  
Date: \_\_\_\_\_

/Paul Pysher/

Paul A. Pysher  
Reg. No. 40,780

Fish & Richardson P.C.  
225 Franklin Street  
Boston, MA 02110-2804  
Telephone: (617) 542-5070  
Facsimile: (617) 542-8906